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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,226	01/18/2001	Baining Liu	101215-55	7377
27387	7590	09/08/2005	EXAMINER	
NORRIS, MCLAUGHLIN & MARCUS, P.A. 875 THIRD AVE 18TH FLOOR NEW YORK, NY 10022			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 09/765,226	Applicant(s) LIU ET AL.	
	Examiner Tuan N. Nguyen	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/26/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Response to Amendment

1. In responds to applicant's amendment filed 07/19/2005, claims 1-13 have been canceled.

Claims 14-20 have been added. ✓

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

3. Claims 14-17, 20 are rejected under 35 U.S.C. 103(a) as being anticipated by Zanger et al. (US 6317449), or Stappaerts (US 5341236).

With respect to claims 14, 15 Zanger et al. '449 discloses a tunable frequency conversion (Title/ Abstract) having pumping source (Fig 8: M1 input), a ring cavity with frequency conversion crystal, prism and mirror arrangement (Fig 8: M1, M2, K, NK, P), having frequency

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conversion crystal that can arrange two or more possible direction for frequency conversion (Fig 8: D1,D2, K, NK), and amplification of pump source using an optical cavity having at least one frequency conversion crystal such that said crystal is passed by the radiation only in the predetermined preferred beam path direction (Fig 8: P, K, NK). The claim further requires that the preferred beam path is determined by the higher output of frequency conversion crystal, to be amplify in the optical cavity. It is within one skill in the art to select the higher or lower output of the frequency conversion crystal to be amplifying in the optical cavity, to select the desire wavelength output involves only routine skill in the art. Since claims 14, 15 recite the same or identical limitations it is inherent to use patents '449 to recite the method of producing laser radiation, product by process.

With respect to claims 16,17 (Fig 8: M1) shows the coupling optic between pump source and an unidirectional external ring cavity (Fig 8: M1, M2, P) (Col 4: 25-30; 45-50).

With respect to claims 20, (Fig 8: P, PZ) shows the prism connect to the piezoelectric element. (Col 9: 20-30).

4. Claims 18, 19 are rejected under 35 U.S.C. 103(a) as being anticipated by Zanger et al. (US 6317449) in view of Gries et al. (US 6633595).

Zanger et al '449 discloses the above and a stage amplifier and an external resonant cavity, which is disclosed by Zanger et al. '449 (ABSTRACT). Even though Gries '595 did not explicitly disclosed a stage amplifier, however the ABSTRACT disclosed the "arrangement for resonant frequency doubling..." suggest the stage amplifier is inherently built in. The claim further requires the frequency conversion crystal is a Brewster BaB_2O_4 , BBO, LiB_3O_5 , or LBO

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crystal. Gries '595 disclosed the crystal made from BBO and the prism connected to a piezoelectric element (Col 2: 15-20) (ABSTRACT; Col 1: 60-61). It would have been obvious to one of ordinary skill in the art to provide Zanger et al. '449 the element as taught or suggested by Gries et al. '595 to have desirable wavelength output.

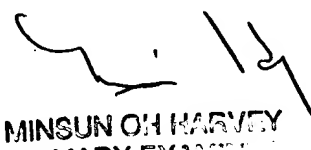
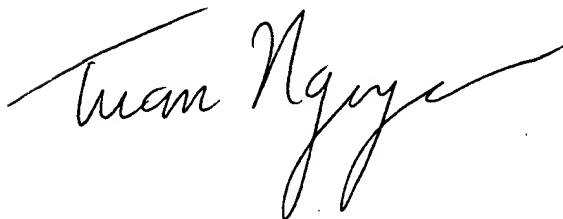
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1948. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen



**MINSUN OH HARVEY
PRIMARY EXAMINER**